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10/599,879	10/12/2006	Hardi Voelkel	WEBE-0021	5955

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EXAMINER	
VALONE, THOMAS F	

ART UNIT	PAPER NUMBER
2831	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOCommunications@hoffmanwarnick.com

Office Action Summary	Application No.	Applicant(s)	
	10/599,879	VOELKEL ET AL.	
	Examiner	Art Unit	
	THOMAS F. VALONE	2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 May 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 19, 35, 39 and by dependence claims 20-34, 36-39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The newly introduced term "middle voltages" in claims 19, 35, 39 lacks antecedent basis in the disclosure originally filed with the application and also, it is not clear what is intended by the term. As a result, it is considered new matter. It is further suggested that the original "mean" term should be restored in those claims. For examination purposes, the term "middle" is interpreted as the same as "mean" or average.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 19-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lambert (6,724,324) in view of Kawahara (6,462,563) and Eichelberger (4,290,052).

Regarding claims 19, 27, 28, 35, 40, Lambert teaches a probe device for a capacitive position finding of a target object in which capacitive electrodes are arranged over a detection area (Fig. 1) on one side of the support as in claim 28. Lambert further teaches that the probe voltages are dependent on the spacing of the target object from a given probe and are evaluated for determining the position of the object (detect proximity, col. 4, line 23-45). Lambert uses a supply voltage across the coupling capacitor (22, Fig. 1) and clearly forms capacitive voltage dividers (22 divided with118 using output 112, Fig. 13, and 22 divided with 102, Fig. 13) as in claims 19, 35, with the probe voltages as middle mean voltages (4 Vrms, col. 13, line 65) being formed through the coupling capacitance and the capacitance of the probe to the environmental object position change to be detected respectively (22, 34, Fig. 1 and 5). Lambert also teaches that the probe voltages are processed with an evaluating device (26, Fig. 1 and col. 4, line 43-45) to an output signal (30, Fig. 1) which is a measure of the position of the target object to be found (Fig. 17 and col. 10, line 53-65) as in claims 19, 35, 40. Lambert teaches the plurality of capacitive probes are distributed on one side of a printed circuit board made of a dielectric over the detection area (Fig. 12) as in claims 27, 28, 40.

Lambert does not explicitly teach the coupling capacitance being uninfluenced by the target nor a plurality of capacitive probes though it can be broadly interpreted that the plurality of electrodes constitute a plurality of probes.

Kawahara from the same field of endeavor clearly teaches a plurality of capacitive probes (Xx, Yy, Fig. 1B) as well as a capacitive voltage divider (Fig. 2C).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a plurality of capacitive probes as taught by Kawahara in the capacitive position device of Lambert for the benefit of obtaining a fingerprint pattern from the variation values of the probes as suggested by Kawahara (col. 3, line 15-20).

Lambert as modified by Kawahara (L-K) does not explicitly teach the coupling capacitance being uninfluenced by the target, even though L-K has a "fixed part of the capacitance" (Lambert, col. 12, line 40-50) due to an insulative layer (Lambert, dielectric, Fig. 1).

Eichelberger from the same field of endeavor teaches the coupling capacitance (Ctr, Fig. 1b) is uninfluenced by the target as in claims 19, 35, and 40, since it is a function only of the area of the electrode 18b, the thickness T and the dielectric constant of the insulative layer 16 (col. 3, line 60-68), which is the same as applicant's coupling layer (72, instant disclosure, p. 17, and Fig. 6,7). Eichelberger further teaches a capacitive voltage divider (col. 6, line 25-30) which includes the coupling capacitance as in L-K.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the L-K coupling capacitance uninfluenced by the target as taught by Eichelberger for the benefit of reduction in the signal present due to a fixed capacitance in the voltage divider, as suggested by L-K (Lambert, col. 12, line 40-50).

5. Regarding claim 20, Lambert does not teach the coupling capacitor as discrete capacitors, although his two capacitor electrode plates (12, 14, Fig. 1) can be viewed as a discrete capacitor, to one of ordinary skill.

Kawahara teaches the coupling capacitor as discrete capacitors (Ctr, col. 3, line 65 and Fig. 1b).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included discrete capacitors as taught by Kawahara as coupling capacitors in the Lambert capacitive position object finder for the benefit of being fabricated on the opposite sides of a dielectric layer as suggested by Kawahara (col. 4, line 64).

6. Regarding claims 21, 39, Lambert teaches a reference probe construction as the grounded electrode probe "held at ground potential" (70, Fig. 4) which serves as the reference potential for the probe, broadly interpreted as in claims 21, 39.

7. Regarding claim 22, Lambert includes a three-dimensional detection area as clearly seen in Figures 1 and 2. Lambert distributes the probes over the same three-dimensional detection area.

8. Regarding claim 23, Lambert teaches an inverter function being applied to each probe by the evaluating device and an integration function (col. 5, line 60-65) which is equivalent to a discrete rectifier since only a positive value is the output, as is well known to one of ordinary skill.

9. Regarding claims 24-26, Lambert teaches a two-channel input microprocessor (AD630, Fig. 14b) as in claim 24, which functions as a multiplexer with the two inputs as in claim 25, as is well known to one of ordinary skill. Lambert also teaches an analog pre-processor amplifier (col. 11, line 40-50 and 116, Fig. 13A) as in claim 26.

10. Regarding claim 29, Lambert teaches support as a printed circuit board (col. 11, line 1-40).

11. Regarding claim 30, the Examiner takes Official Notice that a flexible circuit board is a common off-the-shelf option well known in the prior art for phenolic or fiberglas circuit boards.

12. Regarding claim 31, Lambert teaches that at least parts of the electronics are placed on the support (col. 10, line 5-20, 30-45).

13. Regarding claim 32, Lambert does not teach a continuous metallic layer.

Kawahara teaches a continuous metallic layer for the potential surface (x,1 for example, Fig. 1B).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a Kawahara continuous metallic layer for the unitary potential surface electrode in Lambert's capacitive position finder for the benefit of applying a predetermined voltage uniformly as suggested by Kawahara (col. 4, line 20-30).

14. Regarding claims 33, 34, Lambert teaches another metal layer held at ground potential which is regarded as a shielding electrode to one of ordinary skill (col. 5, line

45-60) thus reducing edge effects, as taught by Lambert (front end shield, Fig. 14d) as in claim 33, with receiving circuit components on the support as in claim 34 (Fig. 12).

15. Regarding claim 36, Lambert teaches the method may be applied to a discrete object such as a person, foreign object, or human body part (col. 10, line 35-40).

16. Regarding claim 37, Lambert further teaches the coupling capacitance is supplied with the same supply voltage at a given frequency (10-100 kHz, col. 4, line 15-20).

17. Regarding claim 38, Lambert teaches quotients for evaluating probe signals (col. 6, 7, 8).

Response to Arguments

18. Acknowledgement is given for the amendment to the claims and the specification. As a result the objections to the claims and specification have been withdrawn.

19. Applicant's arguments filed 5/18/10 have been fully considered but they are not persuasive.

20. Regarding the argument that the applicant's probe arrangement can be implemented with discrete capacitances, implying that this is not the case with the references cited, it is noted that this is also a claimed limitation (claim 20), both of which seem to be in direct contradiction to the disclosed invention: e.g., "The coupling capacitances 22, 32, 42 must not necessarily be *discrete* capacitors" (instant disclosure, p. 14, line 1-2) understood to mean "distinct" capacitors. This is further reinforced with the fact that the capacitors in question are also explained by the applicant as "coupling

electrode 80 in each case form coupling capacitance 22, 32, 42" (instant specification, p. 18), which clearly precludes any discrete capacitors from being in those locations, to one of ordinary skill since the electrode is forming a capacitance, as the applicant also indicates on p. 14 of the specification. It is noted however, that p. 10 of the instant specification teaches a "partly constructed" concept for the discrete coupling capacitance, which would imply a combination of some kind. The applicant's argument (Remarks, p. 9) directs attention to "specification at last paragraph" but no details concerning capacitors are to be found there. The rejection under 35 USC 112-2nd has been withdrawn in view of the p.10 disclosure and not any other portion of the original specification.

21. Regarding the argument that the coupling capacitances remain uninfluenced by an approaching target, it is noted that the applicant contradicts this claim by stating that the coupling capacitances AND the probe capacitance "vary due to the variable position of the target object" (instant disclosure, p. 7), which makes more sense in terms of electrical engineering, to one of ordinary skill. Otherwise, if nothing changes and is "uninfluenced", it does not seem likely that the invention will functionally detect anything, to one of ordinary skill. However, the Eichelberger reference is cited, from the same field of endeavor, who teaches the coupling capacitance (Ctr, Fig. 1b) is uninfluenced by the target as in claims 19, 35, and 40, since it is a function only of the area of the electrode 18b, the thickness T and the dielectric constant of the insulative layer 16 (col. 3, line 60-68), which is the same as applicant's coupling layer (72, instant disclosure, p. 17, and Fig. 6,7). Eichelberger further teaches a capacitive voltage divider (col. 6, line

25-30) which includes a coupling capacitance which therefore is not dependent on the object distance.

22. Regarding the argument concerning the newly introduced "middle" voltage claim limitation, this is addressed in the present Office Action above.

23. Regarding the argument that Lambert's measured capacitance decreases while Eichelberger's remains the same, the cited passage (Eichelberger, col. 3, line 60) does not indicate any further variables that will affect the coupling capacitance. Furthermore, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

24. Regarding the argument that Lambert does not form a voltage divider it is noted that Lambert uses a supply voltage across the coupling capacitor (22, Fig. 1) and clearly does form capacitive voltage dividers (where 22 is divided with118 using output 112, Fig. 13, and 22 divided with 102, Fig. 13) as in claims 19, 35.

25. Regarding the argument that Eichelberger and Kawahara both fail to evaluate a probe voltage, this feature is found in the primary reference Lambert who also teaches that the probe voltages are processed with an evaluating device (26, Fig. 1 and col. 4, line 43-45) to an output signal (30, Fig. 1) which is a measure of the position of the target object to be found (Fig. 17 and col. 10, line 53-65) as in claims 19, 35, 40.

26. Regarding the note concerning Kawahara voltage divider citation, this was an additional citation of a voltage divider noted, besides the primary reference voltage divider cited above. Kawahara's voltage divider cited in the Office Action should have simply pointed to the diagram in Figure 2C that is very similar to the applicant's Fig. 1, which has been corrected in the present Office Action.

Conclusion

27. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS F. VALONE whose telephone number is (571)272-8896. The examiner can normally be reached on M-Tu-W, 9:30-8:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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